



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/904,993 | 07/13/2001 | Patricia Preikschat | 31716US1 | 3817 |

116 7590 12/24/2002

PEARNE & GORDON LLP
526 SUPERIOR AVENUE EAST
SUITE 1200
CLEVELAND, OH 44114-1484

EXAMINER

KOEHLER, ROBERT R

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

1775

DATE MAILED: 12/24/2002

14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/904,993

Applicant(s)

PREIKSCHAT ET AL.

Examiner

Robert R. Koehler

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2002. (Amdt., Corrected Drawings; Sub. Spec.)
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-61 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 October 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 09/171,558.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9,12.
- 4) ☒ Interview Summary (PTO-413) Paper No(s) 14.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Objections

Claim 46 (new) is objected to because of the following informalities: Claim 46 (new) recites "A passivation bath according to claim 21," but the subject matter of claim 46 (new) and claim 21 is directed to a method. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 37 (new) is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 37 (new) is rejected as being indefinite and confusing because the claimed "chromium index greater than 10" appears to conflict with the conversion layer as recited in claim 2 (amended). The Examiner notes that the "chromium index" is defined by the applicants as the "average Cr content in the conversion layer X the conversion layer thickness in nanometers;" see claim 29 (new) in the Preliminary Amendment. The "average Cr content" in the layer must be greater than 5% Cr (claim 29). In claim 2 (amended), when the average Cr content is greater than 5%, then a chromium index of at least 10 (see claim 37) requires a conversion layer thickness of at least 2 nanometers. However, the conversion layer thickness of 2 nm (or more) conflicts with the thickness of the "chromium rich zone" recited in claim 2 (amended) because the "chromium rich zone" has a thickness greater than 15 nm. Therefore, claim 37 provides a confusing, indefinite limitation for the claimed structure of a conversion

Art Unit: 1775

layer. Note that the "chromium rich zone" of claim 2 (amended) has a Cr content greater than 20%.

Double Patenting

Applicant is advised that should claim 47 (new) be found allowable, claim 58 (new) will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Evaluations of the level of ordinary skill in the art requires consideration of such factors as various prior art approaches, types of problems encountered in the art, rapidity with which innovations are made, sophistication of technology involved, educational background of those actively working in the field, commercial success, and failure of others.

The "person having ordinary skill" in this art has the capability of understanding the scientific and engineering principles applicable to the claimed invention. The evidence of record including the references and/or admissions are considered to reasonably reflect this level of skill.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

Art Unit: 1775

claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1 to 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,368,655 (Klos), the cited prior art of record, in view of a technical journal article by Bourke, et al. in "Inorganic Chemistry."

Klos teaches a process for chromating various metal surfaces (e.g., zinc, cadmium, and their alloys) using trivalent chromium (Cr^{+3}) solutions containing various inorganic anions and oxalate ions. The conversion coating solutions taught by Klos do not contain any fluoride ions or hexavalent chromium ions. Klos states that trivalent Cr forms an oxalate complex including water molecules and inorganic ions such as sulfate and phosphate. See line 43 in column 2 to line 32 in column 3. Klos differs from the claims in that Klos does not specify the chemical kinetics of various trivalent chromium complexes and Klos does not provide any information about ligand replacement kinetics involving trivalent chromium.

The technical journal article by Bourke, et al. teaches one example of statistically-controlled kinetics and equilibrium involving the ligand urea and trivalent chromium. Bourke, et al. reports the kinetics of formation and dissociation of trivalent Cr-urea complexes. The chemical solutions studied by Bourke, et al. did not contain any fluoride ions or hexavalent chromium. Bourke, et al. states that monodentate ligands are relatively labile, and that the ease of preparation of complexes with different ligands can also vary. Bourke, et al. teaches ligand

Art Unit: 1775

replacement reactions involving water and urea. See the "Introduction" section on page 1577 of the journal article. Bourke, et al. also report that trivalent Cr-fluoride complexes are kinetically very stable compared to other trivalent Cr-ligand complexes. See the "Discussion" section on pages 1580 to 1581 in the journal article.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected suitable ligands to form trivalent Cr-ligand complexes in conversion coating solution compositions having ligand replacement kinetics greater than the replacement kinetics of fluoride complexes because the technical journal article by Bourke, et al. provides sufficient information about suitable trivalent Cr-ligand complexes which exhibit usable ligand replacement kinetics. A person skilled in the art of conversion coating technology would have been motivated to rely on the technical journal article by Bourke, et al. because a result-effective variable (such as ligand replacement kinetics for a particular trivalent Cr-ligand complex) *can be optimized* by a skilled person in order to achieve a recognized result (such as the formation of adherent, corrosion-resistant conversion coatings on a metal surface or other "catalytic processes" that are influenced by ligand replacement kinetics). See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical.

Response to Arguments

Applicant's arguments with respect to claims 1 to 61 have been considered but are moot in view of the new ground(s) of rejection.

Art Unit: 1775

The corrected or substitute drawings were received on October 17, 2002. These drawings are acceptable.

Conclusion

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Robert Koehler whose telephone number is (703) 308-1974. The Examiner can normally be reached on Tuesday to Friday from 8:30 AM to 6:00 PM. The Examiner can also be reached on alternate Mondays.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Deborah Jones, can be reached on (703) 308-3822. The fax phone number for this Art Unit is (703) 872-9310. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center receptionist whose telephone number is (703) 308-0661.



**ROBERT R. KOEHLER
PRIMARY EXAMINER**

**Art Unit 1775
December 18, 2002**